

REMARKS

Claims 287-303 were rejected under 35 U.S.C. 102(b), as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Katsilometes US 5,730,714. The Examiner stated the following:

Katsilometes discloses nonmetallic tetrapyrrole molecules to catalyze the production of light chemiluminescence. The addition of an electron transport facilitator, a surfactant, a carbohydrate, and a chelating agent to the signal solution increases the output of light. These tetrapyrrole molecules are used alone or attached to haptens or macromolecules and are utilized as labels in the preparation of chemiluminescent, homogenous or heterogenous assays. The term attached can be viewed as being inclusive of a carbon-carbon linkage. They are also used in conjunction with other chemiluminescent label molecules to produce multiple analyte chemiluminescent assays. (Abstract, col. 9-1, for example). The analyte can be a nucleic acid, hapten, vitamins, hormones, drugs, chemicals, which can comprise hydroxyl, amine, sulfhydryl, or any of the reactive groups as listed in the instant claim 289 for example (col 11, lines 37-60, col. 12, lines 13-25).

Claims 289-295, 300-303 have added functions which the prior art has not analyzed such as the specific reactive group; but given the above 102 rejection analysis substantiating the basic characterization of the composition of the invention being the same as the reference, these added characteristics are presumed to be inherent in the prior art composition as described above.

As it is pointed in *In re Fitzgerald* (205 USPQ), page 594, 2nd col., 1st full paragraph, supports the shifting of the burden of proof to the applicant that the instantly claimed invention is novel and unobvious over the prior art. Since both the prior art and the instant application prepare and use composition which appeared to be identical for labeling methods. The prior art therefore suggests that the composition therein disclosed is effective in such methods therefore suggesting the instant application under 35 U.S.C. § 103(a).

Applicants respectfully traverse this rejection.

The claims have been amended to include the limitation that the reactive group is attached directly or indirectly to any one of the four non-pyrrole positions of nonmetallic porphyrin. Therefore, the amended claims are not anticipated by, or are obvious over Katsilometes U.S. 5,730,714 (‘the ‘714 Patent’) because the ‘714 Patent uses deuteroporphyrin IX-2HCl, also referred to as DPIX. As shown in the enclosed copy of a page from an exemplary catalogue illustration (attached herein as Exhibit 3), DPIX has reactive carboxyl groups attached to the pyrrole groups (the five-membered rings of the porphyrin). There is no description or teaching for the use of a porphyrin with the reactive groups in the non-pyrrole positions in the ‘714 Patent.

Jannis Stavrianopoulos et al.

Serial No.: 10/763,088

Filed: January 22, 2004

Page 9 Reply To February 9, 2007 Office Action - August 8, 2007

SUMMARY

Applicants have amended the claims to address the aforementioned anticipation rejection. Therefore, the claims are in proper condition for further examination. In view of the foregoing remarks, Applicants respectfully request reconsideration and withdrawal of the rejections of record and further examination of the amended claims. These claim amendments have not resulted in the addition of new matter. Early and favorable action is respectfully requested.

No other fee or fees are believed due in connection with this paper. In the event that any fee or fees are due, however, the United States Patent and Trademark Office is hereby authorized to charge any such fee or fees to Deposit Account No. 05-1135, or to credit any overpayment thereto.

If a telephone conversation would further the prosecution of the present application, Applicants' undersigned attorney requests that she be contacted at the number provided below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Natalie Bogdanos". The signature is fluid and cursive, with the first name "Natalie" being more prominent than the last name "Bogdanos".

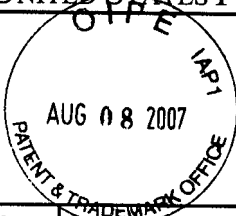
Natalie Bogdanos
Registration No. 51,480
Attorney for Applicants

ENZO LIFE SCIENCES, INC.
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al/USProsecution/Enz-61(D5).amendment.8.8.07



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/763,088

01/22/2004

Jannis G. Stavrianopoulos

Enz-61(D5)

6065

28171 7590 02/09/2007
ENZO BIOCHEM, INC.
527 MADISON AVENUE (9TH FLOOR)
NEW YORK, NY 10022

EXAMINER

RILEY, JEZIA

ART UNIT

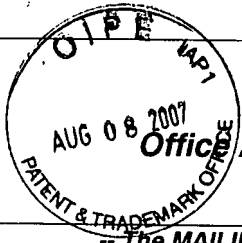
PAPER NUMBER

1637

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.



Office Action Summary

Application No.	Applicant(s)	
10/763,088	STAVRIANOPOULOS ET AL.	
Examiner	Art Unit	
Jezia Riley	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 287-303 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 287-303 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/10/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 287-303 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Katsilometes US 5,730,714.

Katsilometes discloses nonmetallic tetrapyrrole molecules to catalyze the production of light by chemiluminescence. The addition of an electron transport facilitator, a surfactant, a carbohydrate, and a chelating agent to the signal solution increases the output of light. These tetrapyrrole molecules are used alone or attached to haptens or macromolecules and are utilized as labels in the preparation of chemiluminescent, homogeneous or heterogeneous assays. The term attached can be viewed as being inclusive of a carbon-carbon linkage. They are also used in conjunction with other chemiluminescent label molecules to produce multiple analyte chemiluminescent assays. (Abstract, col. 9-1, for example). The analyte can be a nucleic acid, hapten, vitamins, hormones, drugs, chemicals, which can comprise hydroxyl, amine, sulfhydryl, or any of the reactive groups as listed in the instant claim 289 for example (col 11, lines 37-60, col. 12, lines 13-25).

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Art Unit: 1637

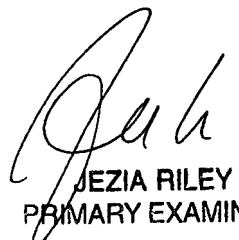
labeling methods. The prior art therefore suggests that the composition therein disclosed is effective in such methods therefore suggesting the instant application under 35 U.S.C. § 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jezia Riley whose telephone number is 571-272-0786. The examiner can normally be reached on 9:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

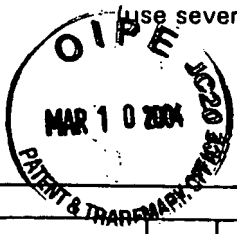
3 February 2007


JEZIA RILEY
PRIMARY EXAMINER



Sheet 1 of 7

Form PTO-1449 U.S. Department of Commerce (REV. 8-83) Patent and Trademark Office	Applicant Docket No. ENZ-61(D5)	Serial No. 10/763,088
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)		
Applicants: Ilan, et al		
Filed: January 22, 2004		Group: Not yet known



U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPRO- PRIATE
JR	5 4 9 4 8 1 0		Barany, et al			
	6 0 0 4 2 8 6		Bellhouse, et al			
	5 5 8 2 9 8 4		Bieniarz, et al			
	5 5 9 9 9 3 2		Bieniarz, et al			
	4 9 7 8 6 1 4		Bronstein, IY			
JR	5 4 6 2 8 5 4		Coassin, et al			

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRANS- LATION YES NO
JR	EP 0 6 6 7 3 9 3	8/16/95	Rabbani et al	A1		
JR	EP 0 0 7 0 6 8 5	7/14/82	Heller, et al	A1		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

JR	Ball, et al., "The use of tailed octamer primers for cycle sequencing," <u>Nucl. Acids. Res.</u> 26:5225-5227 (1998)
JR	Baranov, et al., "A new technique for the characterization of long-range tertiary contacts in large RNA molecules: insertion of a photolabel at a selected position in 16S rRNA within the Escherichia coli ribosome," <u>Nucl. Acids Res.</u> 25:2266-2273 (1997)
JR	Dale, R.M., et al., "Direct covalent mercuration of nucleotides and polynucleotides," <u>Biochemistry</u> 14:2447-2457 (1975)
JR	Dale, R.M., et al., "The synthesis and enzymatic polymerization of nucleotide containing mercury: potential tools for nucleic acid sequencing and structural analysis," <u>Proc. Natl. Acad. Sci. USA</u> 70:2238-2242 (1973)
JR	Doan, T.L., et al., "Targeted cleavage of polynucleotides by complementary oligonucleotides covalently linked to iron-porphyrins," <u>Biochemistry</u> 25:6736-6739 (1986)
JR	Eglinton, G., et al., "A coupling of acetylenic compounds," <u>Adv. Organic Synthesis</u> 4:225-328 (1963)

EXAMINER /Jezia Riley/	DATE CONSIDERED 02/03/2007
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*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPRO- PRIATE
JR	5 8 4 9 4 8 0		Cros, et al			
	4 8 9 4 3 2 5		Engelhardt, et al			
	5 2 4 1 0 6 0		Engelhardt, et al			
	5 2 8 8 6 0 9		Engelhardt, et al			
	6 2 2 1 5 8 1		Engelhardt, et al			
	4 3 7 5 9 7 2		Forgione, et al			
JR	5 2 1 0 0 1 5		Gelfand, et al			

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRANS- LATION YES NO
JR	WO 9 9 2 8 5 0 0	11/27/98	Lee, et al			
JR	EP 0 9 1 7 0 3 9	1/12/00	Rabbani, et al	A1		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

JR	Enzo Biochem, Catalog Nos. 42722, 4723, 4724, New York, NY
JR	Ernst, et al., "Cyanine dye labeling reagents for sulfhydryl groups," <u>Cytometry</u> 10:3-10 (1989)
JR	Fuhrop, J.H., et al., Chapter 19 in "Porphyrins and Metalloporphyrins," ed. Smith, K.M., Elsevier Science, New York (1975)
JR	Kawase, et al., "Studies on nucleic acid interactions. I. Stabilities of mini-duplexes (dG2A4XA4G2-dC2T4YT4C2) and self-complementary d(GGGAAXYTTCCC) containing deoxyinosine and other mismatched bases," <u>Nucl. Acids. Res.</u> 14:7727-7736 (1986)
JR	Kuhlmann, K.F., et al., "Synthesis, DNA-binding and biological activity of a double intercalating analog of ethidium bromide," <u>Nucl. Acids. Res.</u> 5:2629-2633 (1978)
JR	Larock, "Organomercurials in Organic Synthesis," <u>Tetrahedron</u> 38:1713-1754 (1982)

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JR	6 3 3 8 9 5 4		Gemen, B.			
	5 6 4 6 2 6 4		Glazer, et al			
	5 2 4 8 6 1 8		Haces, A.			
	5 7 3 0 8 4 9		Hamby, et al			
	4 7 0 7 4 5 4		Hendrix, JL			
	5 4 6 4 7 4 1		Hendrix, JL			
	5 9 9 4 0 5 6		Higuchi, RG			
JR	5 0 4 7 5 1 9		Hobbs, et al			

FOREIGN PATENT DOCUMENTS

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JR	EP 1 2 7 5 7 3 7	1/15/03	Rabbani, et al	A1		
JR	EP 1 3 4 4 8 3 5	11/17/03	Rabbani, et al	A1		

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

JR	Lee, L.G., et al., "DNA sequencing with dye-labeled terminators and T7 DNA polymerase: effect of dyes and dNTPs on incorporation of dye-terminators and probability analysis of termination fragments," <u>Nucl. Acids Res.</u> 20:2471-2488 (1992)
JR	Liu, H., et al., "PCR amplification using deoxyinosine to replace an entire codon and at ambiguous positions," <u>Biotechniques</u> 16:24-26 (1994)
JR	Liu, D., et al., "Stable human immunodeficiency virus type 1 (HIV-1) resistance in transformed CD4+ monocytic cells treated with multitargeting HIV-1 antisense sequences incorporated into U1 snRNA," <u>J. Virol</u> 71:4079-4085 (1997)
JR	Loakes, D., et al., "5-Nitroindole as an universal base analogue," <u>Nucl. Acids Res.</u> 22:4039-4043 (1994)
JR	Loakes, D., "The applications of universal DNA base analogues," <u>Nucl. Acids Res.</u> 29:2437-2447 (2001)

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	5 5 5 4 5 1 6		Kacien, et al			
	5 9 4 8 6 4 8		Kahn, et al			
	5 9 4 5 2 8 3		Kwok, et al			
	5 9 4 5 5 2 6		Lee, et al			
	5 1 1 8 8 0 1		Lizardi, et al			
	5 1 3 0 2 3 8		Malek, et al			
JR	4 6 8 3 2 0 2		Mullis, et al			

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRAN- SLATION YES NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

JR	Maulding, D.R., et al., "Chemiluminescence from Reactions of Electrophilic Oxamides with Hydrogen Peroxide and Fluorescent Compounds," <u>J. Org. Chem.</u> 33:250-254 (1968)
JR	Moan, J., et al., "Porphyrin photosensitization and phototherapy," <u>Photochem. Photobio.</u> 43:681-690 (1986)
JR	Mujumdar, R.B., et al., "Cyanine dye labeling reagents containing isothiocyanate groups," <u>Cytometry</u> 10:11-19 (1989)
JR	Mujumdar, R.B., et al., "Cyanine dye labeling reagents: sulfoindocyanine succinimidyl esters," <u>Bioconjugate Chemistry</u> 4:105-111 (1993)
JR	Nichols, et al., "A universal nucleoside for use at ambiguous sites in DNA primers," <u>Nature</u> 369:492-493 (1994)
JR	Okayama, H., et al., "High efficiency cloning of full length cDNA," <u>Mol. Cell. Biol.</u> 2:161 (1982)

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JR	5 8 6 6 3 3 6		Nazarenko, et al			
	6 1 1 4 3 5 0		Randall, et al			
	6 1 1 0 6 3 0		Reddy, et al			
	6 0 0 1 5 7 3		Roalent, C.			
	5 7 0 7 5 5 9		Schaap, et al			
JR	6 3 2 3 3 3 7		Singer, et al			

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

JR	Rieke, R.D., "The preparation of highly reactive metals and the development of novel organometallic reagents," <i>Aldrichimica Acta</i> 33:52-60 (2000)
JR	Robins, M.J., et al., "Nucleic Acid Related Compounds. 39. Efficient Conversion of 5-Iodo to 5-Alkynyl and Derived 5-Substituted Uracil Bases and Nucleosides," <i>J. Org. Chem.</i> 48:1854-1862 (1983)
JR	Schaap, et al., "Chemical and Enzymatic Triggering of 1,2-Dioxetanes. 1: Aryl Esterase-Catalyzed Chemiluminescence from a Naphthyl Acetate-Substituted 1,2-Dioxetane," <i>Tetrahedron Letters</i> 28:935-938 (1987)
JR	Schaap, A.P., et al., "Chemical and Enzymatic Triggering of 1,2-Dioxetanes. 3: Alkaline Phosphatase-Catalyzed Chemiluminescence from an Aryl Phosphate-Substituted Dioxetane," <i>Tetrahedron Letters</i> 28:1159-1163 (1987)
JR	Selinger, D.W., et al., "RNA expression analysis using a 30 base pair resolution <i>Escherichia coli</i> genome array," <i>Nature Biotech.</i> 18:1262-1268 (2000)
JR	Shibahara, S., et al., "Site-directed cleavage of RNA," <i>Nucl. Acids Res.</i> 15:4403-4415 (1987)

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JR	4 8 6 8 1 0 3		Stavrianopolous, et al			
	4 9 5 2 6 8 5		Stavrianopolous, et al			
	4 9 9 4 3 7 3		Stavrianopolous, et al			
	5 0 1 3 8 3 1		Stavrianopolous, et al			
	5 5 7 8 8 3 2		Trulson, et al			
	5 1 3 2 2 0 4		Urdea, et al			
	5 8 9 1 6 3 6		Van Gelder, et al			
JR	5 2 6 8 4 8 6		Waggoner, et al			

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DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRAN- SLATION YES NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

JR	Southwick, P.L., et al., "Cyanine dye labeling reagents - carboxymethylindocyanine succinimidyl esters," <u>Cytometry</u> 11:418-430 (1990)
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Form PTO-1449 U.S. Department of Commerce (REV. 8-83) Patent and Trademark Office INFORMATION DISCLOSURE CITATION (use several sheets if necessary)	Atty. Docket No. ENZ-61(D5)	Serial No. 10/763,088
	Applicants: Ilan, et al	
	Filed: January 22, 2004	Group: Not yet known

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPRO- PRIATE
JR	5 6 2 7 0 2 7		Waggoner, et al			
	6 0 0 8 3 7 3		Waggoner, et al			
	5 2 7 0 1 8 4		Walker, et al			
	5 4 5 5 1 6 6		Walker, et al			
	4 7 1 1 9 5 5		Ward, et al			
	5 4 5 5 1 7 5		Wittwer, et al			
JR	6 1 7 4 6 7 0		Wittwer, et al			

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRAN- LATION YES NO

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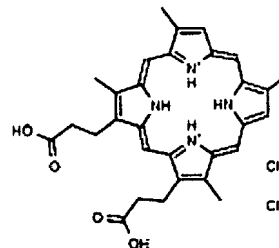
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